Schnoes, Kris Kruk

Ref 34

To: Schnoes, Kris Kruk
Subject: RE: Information for deriving depth for G Miami R at Dayton

From: Michael. Eberle [mailto:cmeberle@usgs.gov]
Sent: Thursday, September 02, 2004 12:15 PM
To: Schnoes, Kris Kruk
Cc: Michael. Eberle
Subject: RE: Information for deriving depth for G Miami R at Dayton

Kris,

The correspondence between gage height and depth is rough at best. The datum for the gage (base level for stage measurement) is usually set slightly below the bottom of the channel so that negative stages don't occur during extreme drought, when a stream may stop flowing or dry up. For some historical reason, the gage datum is way below the bottom of the channel at this particular station. It appears, however, that the inside gage height is consistently about 22 or 23 feet greater than the average depth for any particular measurement.

M.E.

"Schnoes, Kris Kruk" <Kris.Schnoes@ttemi.com>
09/02/2004 12:29 PM

To: "'Michael. Eberle'" <cmeberle@usgs.gov>
cc:
Subject: RE: Information for deriving depth for G Miami R at Dayton

Michael

For that same initial measurement the inside gage height was 25.96 feet. How does this correspond to the depth that we are calculating? I assumed that the gage height was the depth of the water at the gauge.

Thank you
Kris

-----Original Message-----
From: Michael. Eberle [mailto:cmeberle@usgs.gov]
Sent: Thursday, September 02, 2004 11:26 AM
To: Schnoes, Kris Kruk
Cc: Michael. Eberle
Subject: RE: Information for deriving depth for G Miami R at Dayton

Kris,

You're talking about measurement 780 (the one at the top of the list),

correct? If so, then an average depth of 2.08 makes sense. You'll note that this was a wading measurement, at a comparatively low flow, so the maximum depth couldn't have been more than 3 feet for the stream to be wadeable. If you look down the list at some of the bridge measurements at high flows and compute average depths for those, you'll get results of 10 feet or more. Note also that the relation between velocity and depth is a factor also. For example, if a scour hole happened to be in the cross section of a bridge measurement at moderate flow, you could get a fairly high average depth for the given flow; however, the velocity would be low.

Because of all the variation inherent in these measurements, it seems that you'll need to decide first of all whether you're interested in low, medium, or high flows and then look for average depths corresponding to that flow condition. That decision will, of course, depend on the purposes of your project.

Hope this helps some.

Mike Eberle, Information Officer
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"Schnoes, Kris Kruk" <Kris.Schnoes@tetrattech.com>

To: "'Michael. Eberle'" <cmeberle@usgs.gov>
cc:
Subject: RE: Information for deriving depth for G Miami R at Dayton

09/02/2004 11:54 AM

Michael

Thank you for this information. I divided the area by the width and the result is 2.08. I am obviously missing something. Is there some way that the locations of the bridge, etc. fit in to the equation? Is there some conversion factor that I am missing? Thank you for your help.

Kris

Kristine K. Schnoes
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-----Original Message-----
From: Michael. Eberle [mailto:cmeberle@usgs.gov]

Sent: Thursday, September 02, 2004 10:46 AM
To: Schnoes, Kris Kruk
Cc: Michael. Eberle
Subject: Information for deriving depth for G Miami R at Dayton

Kristine--

The following link will take you to the measurement summary I mentioned on the phone:

http://nwis.waterdata.usgs.gov/oh/nwis/measurements/?site_no=03270500&agency_cd=USGS

As I said, you can divide the recorded area by the width to get an average depth for the measured reach for a given streamflow. You'll notice that the next to the last column on the right indicates whether the measurement was made with a bridge crane or by wading. The attached station description, in the paragraph on discharge measurements, identifies the locations of the bridge and the wadeable cross sections.

Hopefully, this info will give you what you need, but feel free to call or write back if it doesn't. I'll be out of the office and unable to respond after about 1:00 Eastern time this afternoon, but I plan to be in all day tomorrow.

Mike Eberle, Information Officer
USGS, 6480 Doubletree Ave.
Columbus, OH 43229-1111
info_oh@usgs.gov
Phone: 614-430-7718 Fax: 614-430-7777

(See attached file: GMR_Dayton_descrip.doc)